Production and manufacturing systems

Academic Year: (2019 / 2020) **Review date: 30-04-2020**

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: DIAZ ALVAREZ, ANTONIO

Type: Compulsory ECTS Credits : 3.0

Year : 2 Semester : 2

OBJECTIVES

By the end of this subject, students will be able to have:
1. knowledge and understanding of the key aspects of production and manufacturing systems, metrology and control of quality.
2. the ability to apply their knowledge and understanding to identify, formulate and solve problems related to production and manufacturing systems, metrology and control of quality using established methods;
3. the ability to apply their knowledge and understanding to analyse engineering products, processes and methods;
4. an understanding of design methodologies of production and manufacturing systems, and an ability to use them.
5. workshop and laboratory skills in production and manufacturing systems.
6. the ability to select and use appropriate equipment, tools and methods to solve problems related to production and manufacturing systems, metrology and control of quality;
7. an understanding of applicable techniques and methods in production and manufacturing systems, metrology and control of quality, and of their limitations;

DESCRIPTION OF CONTENTS: PROGRAMME

Chapter 1: Introduction
Chapter 2: Manufacturing processes and systems.
Chapter 3: Manufacturing costs. Production times.
Chapter 4: Design and manufacturing. Concurrent engineering.
Chapter 5: Measurment process, metrology and control of quality
Chapter 6:Fundamentals of automation for production and manufacturing systems.

LEARNING ACTIVITIES AND METHODOLOGY

- Master classes
- Practical classes in reduced groups: problems and cases studies.
- Individual tutorships and personal student work; oriented to the acquisition of theoretical concepts.
- Laboratory practices: 2 sessions of 1.5 hours

ASSESSMENT SYSTEM

Final mark will be computed as:
- Continous evaluation based on both, partial exams and laboratory practices: 40%
- Final test: 60% (minimum value: 4/10)

Both, the attendance to the laboratory practices and the final report are obligatory.

% end-of-term-examination:	60
% of continuous assessment (assigments, laboratory, practicals…):	40

BASIC BIBLIOGRAPHY

- REGH, A.R. Computer-Integrated Manufacturing, Prentice Hall, 2001
- SINGH, N. Systems Approach to Computer-Integrated Design and Manufacturing, Ed. John Wiley & Sons, 1996
- Serope Kalpakjian Manufacturing Engineering And Technology., Addison-Wesley Pub, 2001